

THE UNITED STAYES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Pioneer Hi-Bred International, Inc.

MICTORS, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE LET TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR FING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE LIRPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT Y.THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'93B07'

In Jestimonn Merrol, I have hereunto set my hand and caused the seal of the Plant Pariety Protection Office to be affixed at the City of Washington, D.C. this twenty-fourth day of April, in the year of our Lord two thousand one.

alan R. Post

Ating Commissioner Plant Variety Protection Office Agricultural Marketing Service Sgriculturo

REPRODUCE LOCALLY. Include form number and date on all reproductions.			FORM APPROVED - OMB NO. 0581-0055			
U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE			The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).			
APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE (Instructions and Information collection burden statement on reverse)			Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).			
1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)			2. EXPERIMENTAL NUMBER	3. VARIETY NAI	ME	
Pioneer Hi-Bred International, Inc.				93B07		
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, an	d Country)		5. TELEPHONE (include area code)	FOR O	FFICIAL USE ONLY	
7300 NW 62nd Ave			515-270-3582	PVPO NUMBER	100446	
P.O. Box 1004		Ì	6. FAX (include area code)	F DATE		
Johnston, Iowa 50131-1004			515-253-2288	i Na (na la		
7. GENUS AND SPECIES NAME	8. FAMILY NAME	(Botanical)		G FILING AND	EXAMINATION FEE:	
Glycine max L. Leguminosa				i au	(D)	
9. CROP KIND NAME (Common name)				TS DATE 10/	14/99	
Soybean				E CERTIFICAT	IION FEET	
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORG. Corporation	ANIZATION (corporation, p	artnership, ass	ociation, etc.) (Common name)	il 2-		
11. IF INCORPORATED, GIVE STATE OF INCORPORATION			12. DATE OF INCORPORATION	V DATE	7-7-14-7-1-1-1-1-1-1-1-1-1	
lowa			May 6, 1926	° 2/	21/0/	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, T	O SERVE IN THIS APPLI	CATION AND	RECEIVE ALL PAPERS	14. TELEPHONE	(include area code)	
John Grace Dr. Daria Schwicht 7300 NW 62nd Ave. P.O. Box 1004 Johnston, Iowa 50131-1004 16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (A. W. Exhibit A. Origin and Breeding History of the Variety b. W. Exhibit B. Statement of Distinctness c. W. Exhibit C. Objective Description of the Variety d. W. Exhibit D. Additional Description of the Variety e. W. Exhibit E. Statement of the Basis of the Applicant's Owners: f. W. Voucher Sample (2,600 viable untreated seeds or, for tuber g. W. Filling and Examination Fee (\$2450), made payable to "Treas"	Johnsto Follow instructions on re hip propagated varieties ver	rification that	0131-1000 tissue culture will be deposited and ma	515-253-2	,	
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SO	LD BY VARIETY NAME C	ONLY, AS A C	LASS OF CERTIFIED SEED (See Section	1 83(a) of the Plant	Variety Protection Act)?	
YES If "yes," answer items 18 and 19 below)	V NO	If "no," go		C DOODUCTION DE	VAND PREEDER SEEDS	
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIN GENERATIONS? YES NO	MIEU AS TO NUMBER O)P 19.1P	IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? FOUNDATION REGISTERED CERTIFIED			
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BE	EN RELEASED, USED, O	PFFERED FOR				
21. The applicant(s) declare that a viable sample of basic seed of the variapplicable, or for a tuber propagated variety a tissue culture will be detected. The undersioned applicant(s) is(are) the owner(s) of this sexually represented and is entitled to protection under the provisions of Section 41, and is entitled to protection under the provisions of Section 4pplicant(s) is(are) informed that false representation herein can jeep	eposited in a public repo roduced or tuber propact on 42 of the Plant Variet	ository and mated plant vary ry Protection	aintained for the duration of the certific priety, and believe(s) that the variety is a Act.	ate		
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE	OF APPLICANT (Owner(s))	*		
D. Hu Fran TIT		Name				
Name (Please print or type)		Name (Ple	ase print or type)			
D. John Grace III CAPACITY OR TITLE	TE 4 5	04D40/=:-	D TT -		Inate	
Soybean Research Coordinator	0/5/99	CAPACITY O	K II(LE		DATE	

Exhibit A. Origin and Breeding History of the Variety

Soybean Variety 93B07

Variety 93B07 evolved from a 1993 cross of 9362*(9362*(9392*(9392*40-3-2))).

It is an F4-derived variety which was advanced to the F4 generation by modified single seed descent. The F5 progeny row of 93B07 was grown in the summer of 1995. Subsequently, 93B07 has undergone three years of extensive testing and purification and has been observed by the breeder to be uniform and stable for all plant traits from generation to generation, with no evidence of variants. On the basis of resistance to labeled rates of Roundup brand herbicides, soybean cyst nematode resistance, and Phytophthora root rot resistance (Rps1c), variety 93B07 was assigned a commercial number.

The purification block was grown during the summer of 1997 and 60 sublines were bulked for increase. Five acres of 93B07 (breeders seed) were grown in the winter of 1997-98. One hundred twenty-seven acres of parent seedstock (foundation seed equivalent) were grown in the summer of 1998 and approximately 6,000 bushels harvested.

Exhibit B. Statement of Distinctness

Soybean Variety 93B07

Variety 93B07 is most similar to Pioneer 9363. Both have white flowers, gray pubescence color and yellow seeds with buff hila. Additionally, both are resistant to labeled rates of Roundup brand herbicides and resistance to races 3 and 14 of soybean cyst nematode. However, 93B07 is significantly earlier than 9363 (Table 1).

Variety 93B07 is similar to Pioneer 93B11, 9304 and 9362. However, 93B07 is resistant to labeled rates of Roundup brand herbicides whereas 93B11, 9304 and 9362 are susceptible.

PVP Application 93B07 Soybean Pioneer Hi-Bred Int'l Inc. September, 1999 Table 1. T-test comparison of 93B07 vs. 9363 for maturity, 1997 1-year analysis.

 $\Sigma(X1-X2)^2 - (\Sigma X1-X2)^2/n$ Formula for Standard Error Calculations: (n)(n-1)SE diff

> 93B07 (X1) 9363 (X2) X1-X2 X1-X2)² -- maturity --YEAR LOC

64.00 49.00 25.00 16.00 16.00 25.00 1.00 9.00 9.00 1.00 16.00 36.00 -1.0 -3.0 -3.0 -1.0 -6.0 -4.0 19.0 122.0 46.0 44.0 41.0 47.0 120.0 41.0 141.0 123.0 138.0 144.0 144.0 130 140 140 38 116 36 143 38 20 132 140 7 4 349G NPA3E 346M NPA3E 346M NPA3E PEA3E PEA3E 349G NPA3E PEA3E DO4A CFA3E 005A CFA3E 805A LPA3E 830A LPA3E 831A LPA3E SJA3E SJA3E 950A I 950A 3986 035E 038E 997 997 997 997 997 997 997 997 997 997 997 997 997

significant at <1% level 0.3 0.5 8.5 135.3 -4.3 0.00000067 1997 Standard Error Calculation: $\mathbf{d} = (Ave X1 - Ave X2)$ SE diff = SQRT of 997 ANALYSIS = d/SE diff = Prob > t =Ave X1 = Ave X2 = SE diff =

 $326 - ((64)^2/15)$ (15)(14)SE $diff_{97} =$ 2030.0 -64.0 326.00 135.33 -4.27 =d

Observations are from plots planted using a randomized complete block design. Planted plot length was 15 feet, trimmed to 12 feet. Plot width was 4-30 inch rows, or 10 feet. Maturity was scored as the number of days from planting until 95% of the pods in the plot were mature.

15 groups of individuals

1966.0

SJA3E

131.07

MEAN SUM

1997

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SEED DIVISION - PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MARYLAND 20705

EXHIBIT C (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY

SOYB	EAN (Glycine max L.)	
NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Pioneer Hi-Bred International, Inc.		93B07
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)		FOR OFFICIAL USE ONLY
7300 N.W. 62nd Ave., P.O. Box 1004		PVPO NUMBER OF OF OF OF OF OF
Johnston, IA 50131-1004	201	
Choose the appropriate response which characterizes the variety in the number of boxes provided, place a zero on the first box when number adequate soybean variety description. Other characters should be de-	nber is 9 or less (e.g., 0 9). Sta	rred characters 🛨 are considered fundamental to an
1. SEED SHAPE:		
3 L	W T	
1 = Spherical (L/W, L/T, and T/W ratios = < 1.5	2) 2 = Soberica	al Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)		e Flattened (L/T ratio > 1.2; T/W > 1.2)
★ 2. SEED COAT COLOR: (Mature Seed)		
1 = Yellow 2 = Green 3 = Brown	4 = Black 5 = Other (Sp	ecify)
3. SEED COAT LUSTER: (Mature Hand Shelled Seed)		
1 = Dull ('Corsoy 79'; 'Braxton')	2 = Shiny ('Nebsoy'; 'Ga	asoy 17')
★ 4. SEED SIZE: (Mature Seed)		
1 5 Grams per 100 seeds		
★ 5. HILUM COLOR: (Mature Seed)		
1 = Buff 2 = Yellow 3 = Brown 4 = Gray	5 = Imperfect Black 6 = B	lack 7 = Other (Specify)
★ 6. COTYLEDON COLOR: (Mature Seed)		
1 = Yellow 2 = Green		
★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:		
2 1 = Low 2 = High		
★ 8. SEED PROTEIN ELECTROPHORETIC BAND:		
1 = Type A (SP1 a) 2 = Typ	e B (SP1 b)	
★9. HYPOCOTYL COLOR:		
1 = Green only ('Evans'; 'Davis')	2 = Green with bron	ze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'	; 'Pickett 71')	•
4 = Dark Purple extending to unifoliate leave	•	266A')
★ 10. LEAFLET SHAPE:		
	Ovate 4 = Other (Speci	fy)
FORM LMGS.470-57 (6-83) (Edition of 2-82 is obsolete		Page 1 of 4

FORM LMGS-470-57 (6-83)

Variety	Name	93B07
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			- 4,751,77141775 00	
19.		Enter 0 = Not Tested; 1 = Susceptible; 2	= Resistant) (Continued)	
4	FUNGAL DISEASES: (Col	•		<u>.</u>
*		(Diaporthe phaseolorum var; sojae)	400	000066
	Purple Seed Stain (0	Cercospora kikuchii)		
	1 Rhizoctonia Root Rot	(Rhizoctonia solani)		
	Phytophthora Rot (P	Phytophthora megasperma var. sojae)		
*	2 Race 1 0 Race	2 2 Race 3 0 Race 4 1	Race 5 0 Race 6	Race 7
	0 Race 8 0 Race	9 Other (Specify)		_
	VIRAL DISEASES:			
	1 Bud Blight (Tobacco F	Ringspot Virus)		
	1 Yellow Mosaic (Bean	Yellow Mosaic Virus)		
*	1 Cowpea Mosaic (Cow	pea Chlorotic Virus)		
	1 Pod Mottle (Bean Pod	Mottle Virus)		
*	1 Seed Mottle (Soybean	Mosaic Virus)		
	NEMATODE DISEASES:			
	Soybean Cyst Nemator	de (Heterodera glycines)		
*	Race 1 0 Race	2 2 Race 3 0 Race 4 2	Other (Specify) Race 14	
	Lance Nematode (Hopi	Iolaimus Colombus)		
*	O Southern Root Knot Ne	ematode (Meloidogyne incognita)		
*	0 Northern Root Knot No	ematode (Meloidogyne Hapla)		
	0 Peanut Root Knot Nem	natode (Meloidogyne arenaria)		
	Reniform Nematode (F	Rotylenchulus reniformis)		
	O OTHER DISEASE NOT	ON FORM (Specify)		
20.	PHYSIOLOGICAL RESPON	SES: (ENTER 0 = Not tested, 1 = Suscept	tible, 2 = Resistant)	
*	0 Iron Chlorosis on Calca	areois Soil		
	Other (Specify)			
<u>,</u> 21	INSECT REACTION: (ENTE	R 0 = Not tested, 1 = Susceptible, 2 = Re	eietant)	
	0 Mexican Bean Beetle		oracity	
	Potato Leaf Hopper (En	npoasca fabae)		
	Other (Specify)			
22.	INDICATE WHICH VARIETY	MOST CLOSELY RESEMBLES THAT SU	BMITTED.	
	CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
	Plant Shape	93B11	Seed Coat Luster	9304
	Leaf Shape	93B11	Seed Size	93B01
	Leaf Color	93B11	Seed shape	9232
	Leaf Size	93B11	Seedling Pigmentation	93B11

Variety Name 93B07

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY		PLANT LODGING	CM	LEAFLET SIZE		SEED CONTENT		SEED SIZE	NO.
	MATURITY	SCORE	HEIGHT	CM Width	CM Length	% Protein	% Oil	G/100 SEED	SEEDS POD
Submitted 93B07	127.6	1.8	94.0			36	19	15.1	3
Name of Similar Variety 93B11	127.4	2.3	90.7			35	19	16.0	3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

- 1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
- 2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
- 3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A2 in the USDA soybean germplasm collection. Crop. Sci., 13: 420-421
- 4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1:1-19

Exhibit D. Additional Description of the Variety

Soybean Variety 93B07

In Exhibit C we have identified variety 93B07 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle and seed mottle.

This does not mean that variety 93B07 is any worse for these problems than other varieties of similar maturity. Rather, we do not consider 93B07 to be immune to these problems. Therefore, we have chosen to be conservative and have identified the line as "susceptible".

If the maturity groups were divided into tenths, the relative maturity for 93B07 would be 3.0.

AGRICULTURAL MARKETING SERVICE	The following statements are made in acc 1974 (5 U.S.C. 552a) and the Paperwork Re	S. William Language Control of the C	
EXHIBIT E	Application is required in order to de		
STATEMENT OF THE BASIS OF OWNERSHIP	certificate is to be issued (7 U.S.C. 2421). Information is held confi- until certificate is issued (7 U.S.C. 2426).		
1. Name Of Applicant(s)	2. Temporary Designation Or Experimental Number	3. Variety Name	
Pioneer Hi-Bred International, Inc.		93B07	
4. Address (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)	5. Telephone (include area code)	6. Fax (include area code)	
7300 NW 62nd Ave	515-270-3582	_ 515-253-2288	
P.O. Box 1004 Johnston, Iowa 50131-1004	7. PVPO Number 🗋 🗍 🔘	00046	
3. Does the applicant own all rights to the variety? Mark an "X" in appropriate	block. If no, Please explain.	YES NO	
<u> </u>			
9. Is the applicant (individual or company) a U.S. national or U.S. based comp If no, give name of country	any?	✓ YES □ NO	
0. Is the applicant the original owner? YES NO	If no, please answer one of the followi	ng:	
a. If original rights to variety were owned by individual(s	i), Is (are) the original owner(s) a U.S.	national(s)?	
☐ YES ☐ NO If no, give name of countr	у		
b. If original rights to variety were owned by a company	(ies), is(are) the original owner(s) a U.	S. based company?	
YES NO If no, give name of countr	ry		
11. Additional explanation on ownership (If needed, use reverse for extra s	pace):		
PLEASE NOTE:			
	neet one of the following criteria:		
	must be a U.S. national, national of a	JPOV member country, or	
Plant variety protection can be afforded only to owners (not licensees) who m 1. If the rights to the variety are owned by the original breeder, that person in	must be a U.S. national, national of a U.S. for the same genus and species.	st be U.S. based, owned by	
national of a country which affords similar protection to nationals of the lIf the rights to the variety are owned by the company which employed the nationals of a UPOV member country, or owned by nationals of a country	must be a U.S. national, national of a U.S. for the same genus and species. e original breeder(s), the company muy which affords similar protection to n	ist be U.S. based, owned by ationals of the U.S. for the sam	

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